Curriculum Vitae

Dr. Nihal Limbu

Assistant Professor, Department of Physics, Basanti Devi College,

147B Rashbehari Avenue, Kolkata-700029.

Email: limbunihal08@gmail.com

Contact Number: 8250886451

Research Area: Condensed Matter Physics, Material Science, Thermo-electricity, Half Metal, DFT.

Educational details:

- **WBBSE: 2010,** Relling High School, Bijanbari, Darjeeling.
- **WBCHSE: 2012,** St. Robert School, Darjeeling.
- **B.Sc (Physics): 2016**, St. Joseph College, Darjeeling.
- **M.Sc (Physics): 2018,** University of North Bengal, Siliguri, Darjeeling.
- **Ph. D. (Physics): 2023,** North-Eastern Hill University, Shillong, Meghalaya.
- **CSIR-NET: 2018**

Research publications

1. **N. Limbu**, A. Saxena, and A. Shankar, First principle study of the perspective thermoelectric material $LnFe_4Sb_{12}$ (Ln = La-Nd, Sm-Tb, Yb), ***Computational Materials Science***, 213, 1116302022.
2. **N. Limbu**, M. Ram, H. Joshi, A. Saxena, and A. Shankar, Electronic and thermoelectric properties of Nd-Doped Ce filled skutterudites, ***Physical Chemistry Chemical Physics***, 4, 4533 (2022).
3. **N. Limbu**, M. Ram, H. Joshi, A. Saxena, S. Bin Omran, R. Khenata, and A. Shankar, Enhanced electronic and thermoelectric properties of p-type doped filled skutterudites RFe_4Sb_{12} (R = Pr, Nd), ***Journal of Applied Physics***, 128, 145104 (2020).
4. **N. Limbu**, A. Saxena, R.K. Thapa, and A. Shankar, Study of electronic and the thermoelectric properties of Gd filled skutterudites, ***Journal of Solid State Chemistry***, 282, 121081 (2020).

5. M. Ram, A. Saxena, **N. Limbu**, H. Joshi, and A. Shankar, Mechanical stability and origin of half-metallicity of new M_2NiZ (M= Sc, Ti, and V; Z= Tl and Pb) Heusler alloys, ***Journal of Applied Physics***, 128, 053901 (2020).
6. H. Joshi, M. Ram, **N. Limbu**, D.P. Rai, B. Thapa, K. Labar, A. Lareef, R.K. Thapa, and A. Shankar, Modulation of optical absorption in m-$Fe_{1-x}Ru_xS_2$ and exploring stability in new m-RuS_2, ***Scientific reports***, 11, 1-13 (2021).
7. H. Joshi, A. Shankar, **N. Limbu**, M. Ram, A. Laref, P.K. Patra, O.B. Ismailova, L. Zuala, S. Chatterjee, and D.P. Rai, Pressure-Induced Enhanced Optical Absorption in Sulvanite Compound Cu_3TaX_4 (X= S, Se, and Te): An ab Initio Study. ***ACS omega***, 7, 19070-19079 (2022).
8. D. Kalita, **N. Limbu**, M. Ram, R. Kalita, and A. Saxena, Study of lattice dynamic, electronic and mechanical properties of Half-Heusler RuCrP alloy, ***Materials Today Communications***, 29, 102799 (2021).
9. D. Kalita, M. Ram, **N. Limbu**, and A. Saxena, DFT study of structural, mechanical, thermodynamic, electronic, and thermoelectric properties of new PdTiZ (Z = Ge and Pb) half Heusler compound, ***International Journal of Quantum Chemistry***, e26951(2022).
10. D. Kalita, **N. Limbu**, M. Ram, R. Kalita, and A. Saxena, Prediction of some physical properties in new half Heusler alloy NbAgSi, ***Journal of Solid State Chemistry***, 310, 122999 (2022).
11. D. Kalita, M. Ram, **N. Limbu**, and A. Saxena, Investigation of mechanical, thermodynamical, dynamical and electronic properties of RuYAs (Y= Cr and Fe) alloys. ***Journal of Physics: Condensed Matter***, 34(8), 085501 (2021).
12. D. Kalita, **N. Limbu**, M. Ram, A. Saxena, Strutural and Electronics properties of the RhFeSi compound under different Approaches, ***Proceeding of the DAE Solid State Physics Symposium***, 55,587-588, ISBN: 81-8372-085-4, (2021).
13. N. Limbu, A. Shankar, and A. Saxena, Electronic and thermoelectric properties of *p*-type $CeFe_4Sb_{12}$, ***Proceeding of the DAE Solid State Physics Symposium***, 55,587-588, ISBN: 81-8372-085-4, (2021).

Seminars/conferences/workshops attended:

Papers presented

1. **"Electronic and thermoelectric properties of *p*-type $CeFe_4Sb_{12}$"**, 65th DAE Solid State Physics Symposium, Organised by Bhabha Atomic Research Centre, Mumbai, Sponsored by Board of research in nuclear sciences (BRNS) Department of Atomic and Energy, Government of India, 15th-19th December 2021.
2. "**Study of electronic properties of $PrFe_4Sb_{12}$**", International Conference on Materials And Mathematical Sciences (ICMMS-2020), School of Advances Kalasalingam Academy of Research and Education, Tamil Nadu, 19th–20th June 2020.

3. "**First-principles study of electronic and thermoelectric properties of Rhodium doped La filled skutterudite**," 1st International e-Conference on Recent Advances & Materials Science-2020 (IC-RAPMS-2020), Kurseong College, Darjeeling, West Bengal in collaboration with St. Joseph's College, Darjeeling, West Bengal, 9th-10th July, 2020.
4. "**Electronic and thermoelectric properties of degenerate p-type semiconductor $CeOs_4Sb_{12}$ under GGA+U approach**", Three Days International Webinar on **Recent Advances in Condensed Matter and Materials Science**, PHYSICHEM-2021, , Cooch Behar Panchanan Barma University, cooch 12th-14th, August 2021.
5. "**Investigation of Electronic and Thermoelectric Properties of $CeFe_4Sb_{12}$: A Plane Wave Approach**" 28th National (Virtual) Conference on Condensed Matter Physics Condensed Matter Days 2020 (CMDAYS), National Institute of Technology Silchar, Assam, 11th – 13th December 2020

Work Shops attended

1. One-week Term Course (online Mode) on **Advanced Functional Materials (AFMAT-2020)** organized Department of Physics, Santlongwal Institute of Engineering and Technology, Punjab, 28th September - 2nd October 2020.
2. One Week Short Term Course on **Advanced Energy Materials**, organized by Department of Physics, Dr. B. R. Ambedkar National Institute of Technology, Jalandhar, Punjab, 12th -16th Oct, 2020.